



Licence Number	L8665/2012/1
Licence Holder	BHP Billiton Iron Ore Pty. Ltd.
ACN	008 700 981
Registered business address	Level 31 Brookfield Place 125-137 St George's Terrace PERTH WA 6000
File Number	2012/003877-1
Duration	01/10/2012 to 30/09/2021
Date of amendment	17 March 2020
Prescribed Premises	Category 54 As defined in Schedule 2
Premises	Warrawandu Village Wastewater Treatment Plant Portion of mining lease ML244SA within co-ordinates: E801494.01 N7416986.95 E801494.01 N7416017.14 E801490.31 N7415776.35 E797741.59 N7415951.61 E797735.44 N7416631.90 E798884.98 N7416625.75 E799354.02 N7417769.78 Zone 50 NEWMAN WA 6753 as depicted in Schedule 1

This Licence is granted to the Licence Holder, subject to the following conditions, on 17 March 2020, by:

**A/MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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Introduction

This Introduction is not part of the Licence conditions.

DWER's industry licensing role

The Department of Water and Environmental Regulation (DWER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. The DWER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

The DWER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process the DWER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. The DWER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licence Holder the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link: <http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

BHP Billiton Iron Ore Pty Ltd (BHP) initially constructed a WWTP consisting of a waste stabilisation pond system, with the capacity to treat up to 700 m³ per day of wastewater to service the 2,000 person Warrawandu Village. Due to the suspension or cancellation of a number of major growth projects since construction of the premises, the average daily throughput has typically reached only 3% of the maximum capacity. The low throughput over an extended period of time has impacted upon the process and produced sub-optimal treatment. To manage this issue, BHP has limited treatment to by-pass the facultative treatment ponds and utilise only maturation pond 1, to ensure optimal holding times in the pond and achieve required parameters in the treated wastewater.

The facility has been constructed in stages. Stage 1 included the completion of two lined facultative and three lined maturation ponds. Stage 2 included the completion of one evaporation pond, a 4ha sprayfield, installation of a pump system and services and the installation of signage and permanent fencing/gates for the spray field. The WWTP system is a biological treatment process, designed to reduce the biological oxygen demand (BOD), total suspended solids (TSS), total nitrogen (TN) and total phosphorous (TP) of the effluent. The system utilises two aerobic/anoxic facultative ponds and three maturation (retention) ponds.

The WWTP is located approximately 4.5 km from Ophthalmia Dam. Other nearby land uses include pastoral activities and mineral exploration and production. The boundary of the Newman Public Drinking Water Supply Area (NPDWSA) was revised and reduced in 2014 but the WWTP is still located within it.

Amendment September 2019

The Licence Holder requested an amendment to increase the disposal of TWW to the Sprayfield from 98.6m³ per day (annual average) to 132m³ per day (annual average), to include the size of the Sprayfield into condition 8, and add a footnote to monitoring tables 5 and 7 to allow *E.coli* to be

reported as MPN where CFU/100ml is unavailable.

In conjunction with the above amendment request, the CEO has also:

- updated that style and appearance of the Licence;
- revised the licence to incorporate previous amendments;
- deleted the redundant AACR form set out in schedule 2 of the previous licence and advised the Licence Holder to obtain the form from the Department’s website;
- corrected numerical order around licence conditions for consistency and flow;
- corrected clerical mistakes and unintentional errors; and
- incorporated the requested amendment to the licence including:

The licences and works approvals issued for the Premises since 17/09/2009 are:

Instrument log		
Instrument	Issued	Description
W4542/2009/1	17/09/2009	Works approval issued
L8665/2012/1	27/09/2012	New licence issued
L8665/2012/1	10/12/2015	Proponent application for amendments to pH and nutrient loading target and groundwater monitoring. Licence amendment to remove targets, add monitoring bores and update to new format.
L8665/2012/1	17/03/2020	Licence amendment to increase the disposal of TWW to the Sprayfield from 98.6m ³ per day (annual average) to 132m ³ per day (annual average), include the size on the Sprayfield into condition 8, and add a footnote to monitoring tables 5 and 7 to allow <i>E.coli</i> to be reported as MPN where CFU/100ml is unavailable. This amended licence includes minor administrative amendments to formatting, numbering, corrections to any administrative errors, and deleted the redundant AACR form set out in schedule 2 of the previous licence and advise the Licence Holder to obtain the form from the Department’s website.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

General

Interpretation

1. In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.
2. For the purposes of this Licence, unless the contrary intention appears:

'AACR' means Annual Audit Compliance Report, a report in a format approved by the CEO as presented by the Licence Holder or as specified by the CEO from time to time and published on the Department's website and a copy of the AACR form is accessible from the DWER website;

'Act' means the *Environmental Protection Act 1986*;

'annual period' means the inclusive period from 1 July to 30 June in the following year;

'AS/NZS 2031' means the Australian Standard AS/NZS 2031 *Selection of containers and preservation of water samples for microbiological analysis*;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*;

'AS/NZS 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer of the Department of Water and Environmental Regulation;

'CEO' for the purpose of correspondence means;

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6027
Telephone: (08) 6367 7000
Facsimile: (08) 6367 7001
Email: info@dwer.wa.gov.au

'DWER' means Department of Water and Environmental Regulation;

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'Licence' means this Licence numbered L8665/2012/1 and issued under the Act;

‘Licence Holder’ means the person or organisation named as Licence Holder on page 1 of the Licence;

‘NATA’ means the National Association of Testing Authorities, Australia;

‘NATA accredited’ means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

‘Premises’ means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

‘Schedule 1’ means Schedule 1 of this Licence unless otherwise stated;

‘Schedule 2’ means Schedule 2 of this Licence unless otherwise stated;

‘Schedule 3’ means Schedule 3 of this Licence unless otherwise stated; and

‘WWTP’ means wastewater treatment plant.

3. Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.
4. Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

General conditions

5. The Licence Holder shall immediately recover, or remove and dispose of spills of sewage, partially treated sewage and sewage sludge outside an engineered containment system.

Premises operation

6. The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit in this section.
7. The Licence Holder shall only allow waste to be accepted onto the Premises if:
 - (a) it is of a type listed in Table 1;
 - (b) the quantity accepted is below any limit listed in Table 1; and
 - (c) it meets any specification listed in Table 1.

Table 1: Waste acceptance			
Waste	Waste Code	Quantity Limit	Specification
Sewage	N/A	700 m ³ per day	Accepted through Inlet Distribution Chamber 1

8. The Licence Holder shall ensure that the wastes accepted onto the Premises are only subjected to the processes set out in Table 2 and in accordance with any process limits or requirements described in Table 2.

Table 2: Waste processing		
Waste type	Process	Process Requirement
Sewage	Biological, physical and chemical treatment	Treatment of sewage waste shall not exceed the treatment capacity of 700 m ³ per day.
Sewage sludge	Storage	In accordance with the document titled “Western Australian guidelines for biosolids management” (Department of Environment and Conservation 2012) as amended from time to time.
Treated Wastewater	Disposal	Disposal of up to 132m ³ per day (annual average) to 5ha ¹ Sprayfield to irrigate native vegetation.
		Disposal of up to 568m ³ per day (annual average) to an unlined Evaporation/Infiltration Pond to evaporate or infiltrate.

Note 1: Within 6 months from the licence amendment date, sprayfield area must increase from 4ha to 5ha

- 9 The Licence Holder shall ensure that waste material is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in Table 3.

Table 3: Containment infrastructure		
Vessel or compound	Material	Requirements
Facultative Treatment Ponds	Wastewater	Lined with 1.5mm HDPE
Maturation Treatment Ponds	Wastewater	Lined with 1.5mm HDPE
Evaporation/Infiltration Pond	Treated Wastewater	Unlined pond to enable evaporation and infiltration
Sludge Drying Area	Sewage Sludge	One bunded area that is lined to achieve hydraulic permeability of 1×10^{-9} m/sec or less, and returns sludge leachate to the start of the treatment process

- 10 The Licence Holder shall manage all wastewater treatment ponds such that:
- overtopping of the ponds does not occur;
 - a freeboard equal to, or greater than, 1000mm is maintained in the Facultative Treatment Ponds;
 - a freeboard equal to, or greater than, 500mm is maintained in the Maturation Treatment Ponds and in the Evaporation/Infiltration Pond;
 - the integrity of the containment infrastructure is maintained;
 - trapped overflows are maintained on the outlet of ponds to prevent carry-over of surface floating matter; and
 - vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments.
- 11 The Licence Holder shall manage the irrigation of treated wastewater such that:
- no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the defined irrigation area;
 - treated wastewater is evenly distributed over the irrigation area;
 - no soil erosion occurs;
 - irrigation does not occur on land that is waterlogged; and
 - vegetation cover is maintained over the irrigation area.

- 12 The Licence Holder shall:
- (a) implement security measures at the site to prevent as far as is practical unauthorised access to the site;
 - (b) undertake regular inspections of all security measures and repair damage as soon as practicable; and
 - (c) ensure the entrance gates are closed and locked when the site is closed or unmanned.
- 13 The Licence Holder shall dispose of grit, screenings, sludge and biosolids to a licensed landfill facility.

Emissions

General

- 14 The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

Emissions to land

- 15 The Licence Holder shall ensure that where waste is emitted to land from the emission points in Table 4 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 4: Emissions to land		
Emission point reference	Description	Source including abatement
Evaporation/Infiltration Pond	Infiltration from Evaporation/Infiltration Pond	Treated wastewater infiltrating from the Evaporation/ Infiltration Pond
Sprayfield Pump Station	Discharge to Sprayfield	Treated wastewater pipeline from wastewater treatment plant

Monitoring

General monitoring

- 16 The licence Holder shall ensure that:
- all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
 - all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
 - all microbiological samples are collected and preserved in accordance with AS/NZS 2031; and
 - all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.
- 17 The Licence Holder shall ensure that:
- quarterly monitoring is undertaken at least 45 days apart; and
 - six monthly monitoring is undertaken at least 5 months apart.
- 18 The Licence Holder shall ensure that the flow meters used on the Premises to comply with the conditions of this Licence are maintained and calibrated in accordance with the manufacturer's specifications.
- 19 The Licence Holder shall maintain the monitoring bores referred to in Table 7 of this licence to allow representative water samples to be collected.
- 20 Where the requirements for sampling, calibration or maintenance cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, the Licence Holder shall bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Monitoring of emissions to land

- 21 The Licence Holder shall undertake the monitoring in Table 5 according to the specifications in that table.

Table 5: Monitoring of emissions to land			
Emission point reference	Parameter	Units	Frequency
Distribution Chamber 6	Total Suspended Solids	mg/L	Quarterly
	Total Dissolved Solids	mg/L	
	Biochemical Oxygen Demand	mg/L	
	Total Nitrogen as N	mg/L	
	Total Phosphorus	mg/L	
	<i>E. coli</i>	cfu/100mL ²	
	pH ¹	-	

Note 1: In field non-NATA accredited analysis permitted.

Note 2: *E.coli* may be reported as MPN where cfu/100ml is not available

Monitoring of inputs and outputs

- 22 The Licence Holder shall undertake the monitoring in Table 6 according to the specifications in that table.

Table 6: Monitoring of inputs and outputs					
Input/ Output	Monitoring Point Reference	Parameter	Units	Averaging period	Frequency
Sewage – Inlet Flow	Sewage Pump Station	Volumetric flow rate (cumulative)	m ³ per day	Monthly	Continuous
Treated wastewater discharged to the Sprayfield	Sprayfield Pump Station	Volumetric flow rate (cumulative)	m ³ per day	Monthly	Continuous
Treated wastewater discharged to the Evaporation/ Infiltration Pond	Distribution Chamber 6	Volumetric flow rate (cumulative)	m ³ per day	Monthly	Continuous

Ambient environmental quality monitoring

- 23 The licence Holder shall undertake the monitoring in Table 7 according to the specifications in that table.

Table 7: Monitoring of ambient groundwater quality			
Monitoring point reference and location	Parameter	Units	Frequency
MB3; and MB6 (background).	Total Suspended Solids	mg/L	Annually
	Total Dissolved Solids calculated from Electrical Conductivity	mg/L	
	Biochemical Oxygen Demand	mg/L	
	Total Nitrogen as N	mg/L	
	Total Phosphorus	mg/L	
	<i>E. coli</i>	cfu/100mL ¹	

Note 1: *E.coli* may be reported as MPN where cfu/100ml is not available

Information

Records

- 24 All information and records required by the Licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 24(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or

(ii) matters which affect the condition of the land or waters.

- 25 The Licence Holder shall complete an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 26 The Licence Holder shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

Reporting

- 27 The Licence Holder shall submit to the CEO an Annual Environmental Report within 93 calendar days after the end of the annual period. The report shall contain the information listed in Table 8 in the format or form specified in that table, which was collected during the annual period.

Table 8: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 1	Waste acceptance	Tabular
Table 2	Waste processing	Tabular
Table 5	Monitoring of emissions to land	Tabular
Table 6	Monitoring of inputs and outputs	Tabular
Table 7	Monitoring of ambient groundwater quality	Tabular
25	Compliance	Annual Audit Compliance Report (AACR)
26	Complaints summary	None specified

Note 1: Forms are available on the Departments website

- 28 The Licence Holder shall ensure that the Annual Environmental Report also contains:
- (a) an assessment of the information contained within the report against monitoring results from the previous three annual periods;
 - (b) calculation of the annual Total Nitrogen and Total Phosphorous loading rates applied to the Sprayfield during the annual period, and an assessment of these loading rates against the loading rates from the previous three annual periods;
 - (c) any changes to containment infrastructure, site boundaries, location of groundwater monitoring bores, surface drainage channels and on-site or off-site impacts of pollution that occurred during the annual period; and

- (d) quantities of sludge removed during each desludging event that occurred during the annual period.

29 The Licence Holder shall submit the information in Table 9 to the CEO according to the specifications in that table.

Table 9: Non-annual reporting requirements				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the Licence Holder by third parties	Not Applicable	Within 14 days of the CEOs request	As received by the Licence Holder from third parties

Notification

30 The Licence Holder shall ensure that the parameters listed in Table 10 are notified to the CEO in accordance with the notification requirements of the table.

Table 10: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form
6	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day.	N1
-	Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution	Part B: As soon as practicable	
18	Calibration report	As soon as practicable.	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Schedule 1: Maps

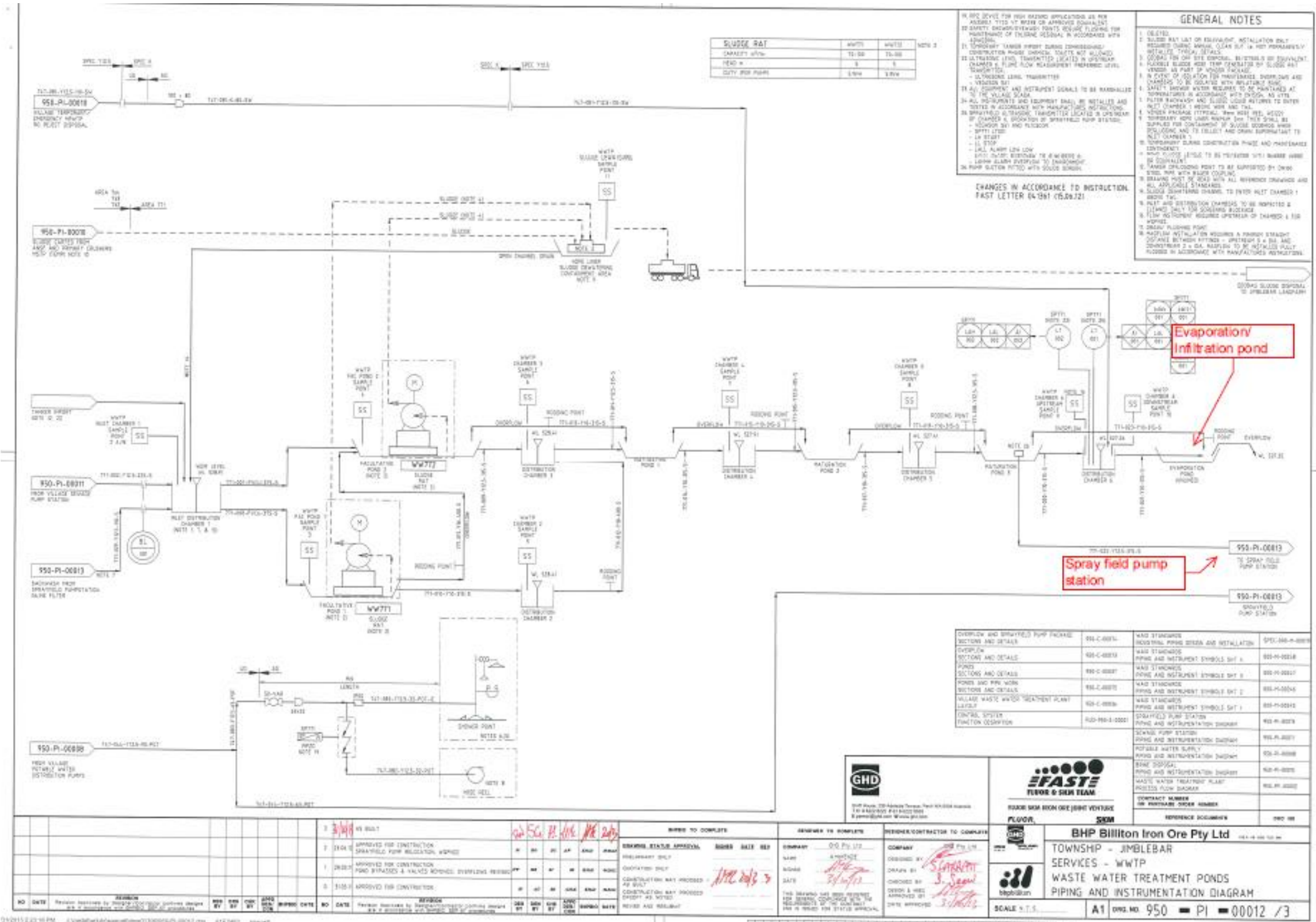
Premises map

The Premises are shown in the map below.



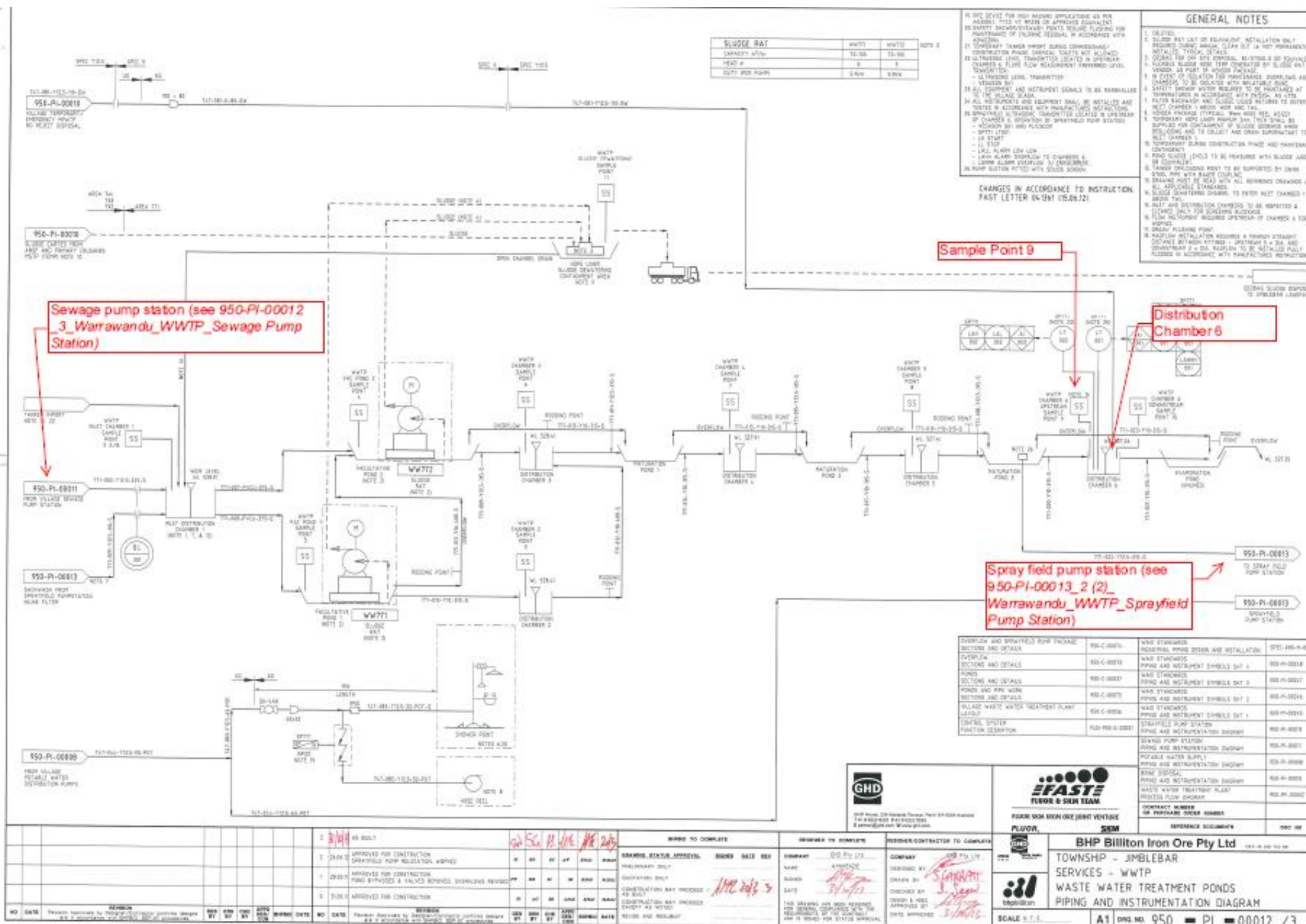
Map of emission points

The locations of the emission points defined in Table 4 are shown below.



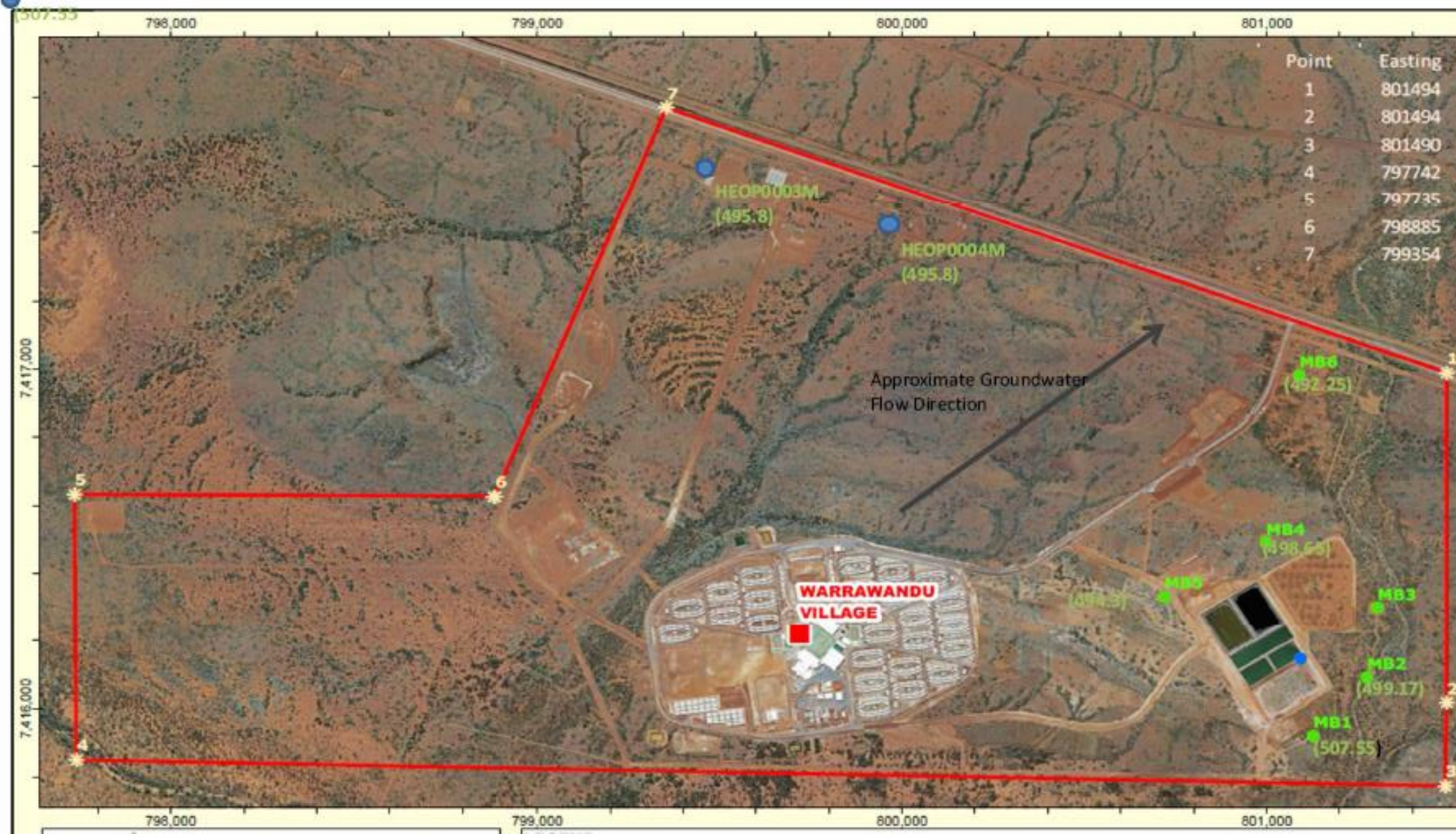
Maps of monitoring locations

The locations of the monitoring points defined in Tables 6 and 7 are shown below.



Maps of monitoring locations

The locations of the monitoring points defined in Table 7 are shown below.



Schedule 2: Prescribed Premises Categories

The Premises prescribed categories under schedule 1 of *Environmental Protection Regulation 1987*

Prescribed Premises categories

Category number	Category Description	Category production or design capacity	Approved Premises production or design capacity
54	Sewage facility: premises – (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	100 m ³ or more per day	700 m ³ per day

Schedule 3: Forms

Licence: L8665/2012/1
Form: N1

Licensee: BHP Billiton Iron Ore Pty. Ltd.
Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution	
Date and time of event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken , or intended to be taken, to stop any emission	
Description of the failure or accident	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of BHP Billiton Iron Ore Pty. Ltd.	
Date	